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**PhD**

**Thermal and isotopic evolution of an exhumed accretionary prism: Otago Schist, New Zealand**

The  Otago Schist belt in the South Island of New Zealand is a world-renown metamorphosed accretionary prism that formed on the Mesozoic paleo-Pacific Gondwana margin. It has long been considered a polyphase prograde metamorphic belt; however, the thermal evolution is poorly understood. This has been highlighted by recent discoveries that 1) the belt is underlain by a young granulite facies lower crust; 2) detrital zircon populations require the Otago Schist to have significant variations in protolith and metamorphic age; and 3) the rocks of the metamorphic core were overprinted by deformation during exhumation.

We seek a student to undertake a PhD characterising trace elements and isotope ratios of titanite, monazite and other accessory phases with the purpose of understanding the thermal history during metamorphism and exhumation of an accretionary prism. Fieldwork will include examination of existing samples and collection of new material across Otago, and analytical methods will include in-situ measurement of trace elements, Rb-Sr, Sm-Nd, U-Pb, and Lu-Hf isotopes by LA-ICP-MS. Ideally, the student should have a background in metamorphic petrology and experience with LA-ICP-MS although a willingness to learn is almost as good.

Work will be supervised by Associate Professor James Scott at the University of Otago in collaboration with Dr. Nick Mortimer of GNS Science in New Zealand and Professor Graham Pearson of the University of Alberta in Edmonton, Canada. The work will be based at the University of Otago, although a portion of the analytical work may be done with or in the Arctic Resources Laboratory at the University of Alberta. Send a 2 page CV and expression of interest to James Scott (James.scott@otago.ac.nz). It will be necessary to obtain a University of Otago PhD Scholarship, and to do so the domestic student requires a > 7.3 GPa in their 4th year or MSc years, and a A- for a previous research project (see: [https://www.otago.ac.nz/graduate-research/scholarships/phd/index.html](https://apc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.otago.ac.nz%2Fgraduate-research%2Fscholarships%2Fphd%2Findex.html&data=02%7C01%7Cjames.scott%40otago.ac.nz%7Cd96bf85cb15b46509bc008d7a8156111%7C0225efc578fe4928b1579ef24809e9ba%7C1%7C0%7C637162682155712446&sdata=vtBWCNVFIC1GAf6cT54aL5vqShF%2F%2BdiPoLyyf1JRep0%3D&reserved=0) for details and a link to a grade converter). Enquires welcome. Position will remain open until filled.